REMARKS

I. Introduction

Claims 1-3, 5, 7-11, and 13-17 are pending in the application. In the final Office Action dated Feb. 2, 2009, the Examiner rejected claims 1-3, 5, 7-9, 13, and 16 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,544,250 ("Urbanski") in view of U.S. Pat. No. 6,563,931 ("Soli") and U.S. Pat. No. 4,420,655 ("Suzuki"); rejected claims 10 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Urbanski in view of Suzuki and U.S. Pat. No. 5,937,070 ("Todter"); and rejected claims 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Urbanski in view of Soli and Todter. Applicants request reconsideration in light of the following remarks.

II. The Proposed Combination Does Not Render Claim 8 Unpatentable

Independent claim 8 recites, in relevant part:

> 8. A speech communication apparatus comprising:
>
> a background sound microphone;
>
> an adaptive filter operable to estimate speech signals from the background sound microphone;
>
> an adder operable to subtract the estimated speech signal from the output of the background sound microphone;
>
> a background sound level calculator operable to calculate a level of a signal outputted from the adder and a level of the background sound; and
>
> a received speech clarifying filter operable to adjust a gain for received speech to be output by a speaker based on the background sound level, wherein the received speech to be output by the speaker is not received at a microphone of the speech communication apparatus.

Accordingly, in claim 8, the received speech clarifying filter adjusts a gain of a first signal that was not received at a microphone of the speech communication apparatus (the received-speech signal to be output by the speaker of the speech communication apparatus that was not received at the microphone of the speech communication apparatus) based on a background sound level in a second distinct signal that is received at a microphone of the speech communication apparatus (the output of the background sound microphone of the speech communication apparatus). The proposed combination of Urbanski, Soli, and Suzuki fails to teach this element.

In the proposed combination of Urbanski, Soli, and Suzuki, the Examiner asserts that Urbanski in view of Soli teaches a received speech clarifying filter operable to adjust a gain for received speech to be output by a speaker based on the background sound level, wherein the received speech to be output by the speaker is not received at a microphone of the speech communication apparatus. Urbanski is directed to a noise suppression system and method therefore. As acknowledged by the Examiner, the portions of the disclosure of Urbanski that were cited by the Examiner teach adjusting a level of a signal based on noise that is detected in that same signal. In an effort to cure the deficiencies of Urbanski, the Examiner proposes combining Urbanski with Soli. Soli is directed to an auditory prothesis for adaptively filtering selected auditory components by user activation and a method for doing the same. The cited portions of Soli teach the use of a microphone that is able to output a primary input signal and a noise reference signal. The primary input signal may then be adjusted based on the noise reference signal. The portions of Urbanksi and Soli cited by the Examiner both fail to teach adjusting a gain of a first signal that is not received at a microphone of a speech communication apparatus based on a power level of background nose extracted from a signal that is received at a microphone of the speech communication apparatus. In Soli, a primary signal received at a microphone is adjusted based on a noise reference signal received at that same microphone, and in Urbanski, a signal is adjusted based on noise detected in that same signal.

Further, in the final Office Action, the Examiner asserts that the claim language of claim 8 is commensurate with the example of a first user speaking into a microphone of a first communication device, the first communication device filtering noise and transmitting a speech signal to a second communication device, and the second communication device outputting the speech signal. (See final Office Action dated Feb. 2, 2009, page 2). Applicants respectfully disagree with the Examiner's interpretation of claim 8. Using the Examiner's example with respect to two communication devices, in claim 8, in one implementation, a first user may speak into a microphone of a first communication device; the first communication device may transmit a speech signal of the first user to the second communication device; the second communication adjusts a gain of the received speech signal of the first user based on background noise detected

at the second communication device using the adaptive filter, adder, background sound level calculator, and received speech clarifying filter of the second communication device; and the second communication device then may play the adjusted received speech signal of the first user to a second user. The proposed combination of Urbanski, Soli, and Suzuki fails to teach this type of operation.

The proposed combination of Urbanski, Soli, and Suzuki fails to teach at least a received speech clarifying filter operable to adjust a gain for received speech to be output by a speaker based on the background sound level, wherein the received speech to be output by the speaker is not received at a microphone of the speech communication apparatus. For at least this reason, the proposed combinations of Urbanski, Soli and Suzuki do not render independent claim 8, or any claim that depends on claim 8, unpatentable.

III. The Proposed Combinations Do Not Render Claim 14 Unpatentable

Independent claim 14 recites, in relevant part:

> 14. A speech communication apparatus for bi-directional speech communications, comprising:
>
> a speaker for outputting received speech;
>
> background sound level measurement calculator operable to measure a level of background sound; and
>
> a received-speech clarifying section operable to adjust a gain for the received speech to be outputted by the speaker based on the level of the background sound measured by the background sound level measurement calculator, wherein the received speech to be outputted by the speaker is not received by a microphone of the speech communication apparatus.

Accordingly, in claim 14, the received speech clarifying section adjusts a gain of a first signal that was not received at a microphone of the speech communication apparatus (the received speech to be output by the speaker of the speech communication apparatus that was not received at the microphone of the speech communication apparatus) based on a level of background sound in a second distinct signal measured by the background sound level measurement calculator (the background sound level calculated based on an output of a background-sound microphone). The proposed combination of Urbanski, Soli, and Todter fails to teach this element.

In the proposed combination of Urbanski, Soli, and Todter, the Examiner asserts that Urbanski in view of Soli teaches a received-speech clarifying section operable to adjust a gain for the received speech to be outputted by the speaker based on the level of the background sound measured by the background sound level measurement calculator, wherein the received speech to be outputted by the speaker is not received by a microphone of the speech communication apparatus. However, as explained above in conjunction with claim 8, Urbanski in view of Soli each fail to teach this element. In Soli, a primary signal received at a microphone is adjusted based on a noise reference signal received at that same microphone, and in Urbanski, a signal is adjusted based on noise detected in that same signal. Neither Urbanski nor Soli teach adjusting a gain of a first signal that was not received at a microphone of the speech communication apparatus based on a level of background sound in a second distinct signal measured by the background sound level measurement calculator.

Further, in the final Office Action, the Examiner asserts that the claim language of claim 14 is commensurate with the example of a first user speaking into a microphone of a first communication device, the first communication device filtering noise and transmitting a speech signal to a second communication device, and the second communication device outputting the speech signal. (See final Office Action dated Feb. 2, 2009, page 2). Applicants respectfully disagree with the Examiner's interpretation of claim 14. Using the Examiner's example with respect to two communication devices, in claim 8, in one implementation, a first user may speak into a microphone of a first communication device; the first communication device may transmit a speech signal of the first user to the second communication device; the second communication adjusts a gain of the received speech signal of the first user based on background noise detected at the second communication device using a background sound level measurement calculator and received-speech clarifying section of the second communication device; and the second communication device then may play the adjusted received speech signal of the first user to a second user. The proposed combination of Urbanski, Soli, and Todter fails to teach these operations.

The proposed combination of Urbanski, Soli, and Todter fails to teach at least a received-speech clarifying section operable to adjust a gain for the received speech to

be outputted by the speaker based on the level of the background sound measured by the background sound level measurement calculator, wherein the received speech to be outputted by the speaker is not received by a microphone of the speech communication apparatus. For at least this reason, the proposed combinations of Urbanski, Soli, Todter, and Suzuki do not render independent claim 14, or any claim that depends on claim 14, unpatentable.

IV. The Proposed Combinations Do Not Render Claim 1 Unpatentable

Independent claim 1 recites, in relevant part:

> A speech communication apparatus comprising:
>
> a speaker;
>
> a microphone;
>
> background sound level measurement means for measuring a power level of background sound by subtracting the power of the output of a pseudo-proximity-effect filter from a power of an output of the microphone;
>
> received-speech clarifying means for adjusting a gain for a received-speech signal to be output by the speaker based on the power level of the background sound measured by the background sound level measurement means;
>
> wherein the received speech signal to be output by the speaker is not received at the microphone of the speech communication apparatus.

Accordingly, in claim 1, the received speech clarifying means adjusts a gain of a first signal that was not received at a microphone of the speech communication apparatus (the received-speech signal to be output by the speaker of the speech communication apparatus that was not received at the microphone of the speech communication apparatus) based on a power level of background sound extracted from a microphone of the speech communication apparatus (the output of the microphone of the speech communication apparatus). The proposed combination of Urbanski, Soli, and Suzuki fails to teach this element.

In the proposed combination of Urbanski, Soli, and Suzuki, the Examiner asserts that Urbanski in view of Soli teaches received-speech clarifying means for adjusting a gain for a received-speech signal to be output by the speaker based on the power level of the background sound measured by the background sound level measurement

means, where the received speech signal to be output by the speaker is not received at the microphone of the speech communication apparatus. However, as explained above in conjunction with claim 8, Urbanski in view of Soli each fail to teach this element.

In Soli, a primary signal received at a microphone is adjusted based on a noise reference signal received at that same microphone, and in Urbanski, a signal is adjusted based on noise detected in that same signal. Neither Urbanski nor Soli teach adjusting a gain of a first signal that was not received at a microphone of the speech communication apparatus based on a power level of background sound extracted from a microphone of the speech communication apparatus. Accordingly, the proposed combination of Urbanski, Soli, and Suzuki fails to teach at least received-speech clarifying means for adjusting a gain for a received-speech signal to be output by the speaker based on the power level of the background sound measured by the background sound level measurement means, where the received speech signal to be output by the speaker is not received at the microphone of the speech communication apparatus.

Independent claim 1 additionally recites, in relevant part:

> 1. A speech communication apparatus for bi-directional speech communications, comprising:
>
> a transmission-speech signal generation filter for manipulating a frequency characteristic of an output of the microphone to minimize a proximity effect produced in the output of the microphone, where the resulting signal output from the transmission-speech signal generation filter is a transmission-speech signal;
>
> a pseudo-proximity-effect filter for applying a pseudo proximity effect on the transmission-speech signal output by the transmission-speech signal generation filter;
>
> background sound level measurement means for measuring a power level of background sound by subtracting the power of the output of the pseudo-proximity-effect filter from the power of the output of the microphone.

In the proposed combinations of Urbanski, Soli, and Suzuki, the Examiner asserts that Suzuki teaches the above-recited elements of claim 1. Applicants respectfully disagree.

Suzuki is directed to a circuit to compensate for deficit of output characteristics of a microphone by output characteristics of associated other microphones. Generally, Suzuki teaches a system including a first microphone having a proximity effect and a

second microphone that does not have a proximity effect. When the first microphone approaches a source of a sound, creating a proximity effect, a circuit compensates for the proximity effect based on an output of the second microphone. Within the Suzuki system, a differential signal is used that represents a difference between the outputs of the first and second microphones. The differential signal is used to determine when a proximity effect is present in the output of the first microphone. Suzuki fails to teach a pseudo-proximity-effect filter applying a pseudo proximity effect on a signal whose frequency has been manipulated to minimize a proximity effect. Suzuki also fails to teach measuring a power level of background sound by subtracting a power of the output of the pseudo-proximity-effect filter from a power of an output of a microphone.

For at least these reasons, the proposed combinations of Urbanski, Soli, and Suzuki do not render independent claim 1, or any claim that depends on claim 1, unpatentable.

V. The Proposed Combinations Do Not Render Claim 10 Unpatentable

Independent claim 10 recites, in relevant part:

> 10. A speech communication apparatus for bi-directional speech communications, provided with a handset having at a front face a speaker for outputting received speech and a transmission-speech microphone for collecting speech to be transmitted, the speech communication apparatus comprising:
>
> a background-sound microphone disposed at the rear face of the handset at almost the same height as the speaker, for collecting background sound;
>
> background sound level measurement means for measuring a power level of background sound by subtracting a power of an output of a pseudo-proximity-effect filter from a power of an output of the background-sound microphone; and
>
> received-speech clarifying means for adjusting a gain for received speech that is output from the speaker based on the power level of the background sound measured by the background sound level measurement means, wherein the received speech that is output from the speaker is not received at a microphone of the speech communication apparatus.

Accordingly, in claim 10, the received speech clarifying means adjusts a gain of a first signal that was not received at a microphone of the speech communication apparatus

(the received-speech signal to be output by the speaker of the speech communication apparatus that was not received at the microphone of the speech communication apparatus) based on a power level of background sound measured by the background sound level measurement means (the output of the microphone of the speech communication apparatus). The proposed combination of Urbanski, Suzuki, and Todter fails to teach this element.

In the proposed combination of Urbanski, Suzuki, and Todter, the Examiner asserts that Urbanski teaches received-speech clarifying means for adjusting a gain for received speech that is output from the speaker based on the power level of the background sound measured by the background sound level measurement means, wherein the received speech that is output from the speaker is not received at a microphone of the speech communication apparatus. As acknowledged by the Examiner, the portions of the disclosure of Urbanski that were cited by the Examiner teach adjusting a level of a signal based on noise that is detected in that same signal.

The cited portions of Urbanski do not teach adjusting a gain of a first signal that was not received at a microphone of the speech communication apparatus based on a power level of background sound measured by the background sound level measurement means based on an output of the microphone of the speech communication apparatus. Accordingly, The proposed combination of Urbanski, Suzuki, and Todter fail to teach received-speech clarifying means for adjusting a gain for received speech that is output from the speaker based on the power level of the background sound measured by the background sound level measurement means, wherein the received speech that is output from the speaker is not received at a microphone of the speech communication apparatus.

Independent claim 10 additionally recites, in relevant part:

> 10. A speech communication apparatus for bi-directional speech communications, provided with a handset having at a front face a speaker for outputting received speech and a transmission-speech microphone for collecting speech to be transmitted, the speech communication apparatus comprising:
>
> a transmission-speech signal generation filter for manipulating a frequency characteristic of an output of the background-sound microphone to minimize a proximity effect produced in the output of the background-sound microphone, where the resulting signal output from the

transmission-speech signal generation filter is a transmission-speech signal;

a pseudo-proximity-effect filter for applying a pseudo proximity effect on the transmission-speech signal output by the transmission-speech signal generation filter; and

background sound level measurement means for measuring a power level of background sound by subtracting the power of the output of the pseudo-proximity-effect filter from the power of the output of the background-sound microphone.

In this proposed combination of Urbanski, Suzuki, and Todter, the Examiner asserts that Suzuki teaches the above-recited transmission-speech singal generation filter and the pseudo-proximity-effect filter, and that Urbanski in view of Suzuki teaches the background sound level measurement means. Applicants respectfully disagree.

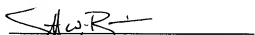
As discussed above in conjunction with claim 1, Suzuki fails to teach applying a pseudo proximity effect on a signal while frequency characteristic has been manipulated to minimize a proximity effect. Further, both Urbanski and Suzuki fail to teach measuring a power level of background sound by substracting a power of an output of the pseudo-proximity-effect filter from a power of the output of a background-sound microphone.

For at least these reasons, the proposed combinations of Urbanski, Suzuki, Todter, and Soli do not render independent claim 10, or any claim that depends on claim 10, unpatentable.

VI. Conclusion

In view of the foregoing remarks, Applicants submit that the pending claims are in condition for allowance. Reconsideration is therefore respectfully requested. If there are any questions concerning this Response, the Examiner is asked to phone the undersigned attorney at (312) 321-4200.

Respectfully submitted,



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